This product is not manufactured for Iran. SVC Warraty will not be applicable and the user will be responsible for service expenses when the product is used in Iran.

QUESTIONS OR COMMENTS?

COUNTRY	CALL	OR VISIT US ONLINE AT
U.A.E	800-SAMSUNG (726-7864)	www.samsung.com
OMAN	800-SAMSUNG(726-7864)	www.samsung.com/ae (English) www.samsung.com/ae_ar (Arabic)
KUWAIT	183-2255 (183-CALL)	www.samsung.com/ae (English) www.samsung.com/ae_ar (Arabic)
BAHRAIN	8000-4726	www.samsung.com/ae (English) www.samsung.com/ae_ar (Arabic)
QATAR	800-2255 (800-CALL)	www.samsung.com/ae (English) www.samsung.com/ae_ar (Arabic)
EGYPT	08000-726786	www.samsung.com
JORDAN	800-22273 065777444	www.samsung.com/Levant(English)
SYRIA	18252273	www.samsung.com/Levant(English)
MOROCCO	080 100 2255	www.samsung.com
SAUDI ARABIA	9200-21230	www.samsung.com/sa (Arabic)
TURKEY	444 77 11	www.samsung.com
INDIA	1800 3000 8282 1800 266 8282	www.samsung.com/in
SOUTH AFRICA	0860-SAMSUNG(726-7864)	www.samsung.com

AF28FSSDA✳✳ Series
AF28FSZDA✳✳ Series

Air Conditioner
user & installation manual

Planet First 100% Recycled Paper

This manual is made with 100% recycled paper.

imagine the possibilities

Thank you for purchasing this Samsung product.
To receive more complete service, please register your product at

www.samsung.com/register

EN FR AR DB68-03892A(2)

SAMSUNG

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 63 2013-04-17 오전 11:07:55

Features of your new air conditioner

Samsung Air Solution! Cool, Clean and refreshing feeling at once

Cool Air : Your air conditioner uses air flow direction control which provide direct air flow in hot days and indirect air flow when you are cooled down.

Refreshing Air : Auto mode will provide refreshing air by selecting the operation mode automatically from Cool, Dry, Purity depending on the indoor air environment.

4 seasons of effective cleaning

Purity mode

- ▶ Purity mode can be selected solely to save energy.
- ▶ When the air conditioner operates, Zero filter and the Virus Doctor eliminates harmful contaminants to provide us with the cleanest air.

Smart sensor

Camera on the top of the indoor unit will detect the movement within the indoor and when there is no movement for a certain time, air conditioner will adjust the indoor temperature or turn off power automatically to save the energy.

❋ Applicable to AF✳✳FSSD✳✳✳ only

Correct Disposal of This Product
(Waste Electrical & Electronic Equipment)

(Applicable in countries with separate collection systems)

This marking on the product, accessories or literature indicates that the product and its electronic accessories (e.g. charger, headset, USB cable) should not be disposed of with other household waste at the end of their working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take these items for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product and its electronic accessories should not be mixed with other commercial wastes for disposal.

(For India only)

For more information on safe disposal and recycling visit our website
www.samsung.com/in or contact our Helpline numbers - 18002668282, 180030008282

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 2 2013-04-17 오전 11:07:24

Contents

USING PARTS

Safety precautions 4
Checking before use 11
Checking the name of the parts 14
Checking the remote controller 17
Basic operation 19
Turbo operation 21
Air flow direction 21
good'sleep operation 22
Setting the On/Off timer 24
Smart sensor operation 26
Lighting function 26
Quiet operation 27
Auto clean operation 27
Cleaning the air conditioner 28
Troubleshooting 31
Open Source Announcement 34

INSTALLATION PARTS

Safety precautions 42
Required tools 44
Choosing the installation location 44
Indoor/outdoor unit installation diagram 45
Accessories 48
Drilling a hole and fixing the indoor unit 49
Connecting pipes 49
Connecting drain hose 52
Electrical work 53
Vacuum pump 57
Performing leak test 58
Installing the earth wire 59
Charging refrigerant 59
Check and test operation 61
Pump down procedure (When removing the product) 61

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 3 2013-04-17 오전 11:07:24

Safety precautions

Before using your new air conditioner, please read this manual thoroughly to ensure that you know how to safely and efficiently operate the extensive features and functions of your new appliance.

If you have any questions, call your nearest contact center or find help and information online at www.samsung.com.

Important safety symbols and precautions:

WARNING	Hazards or unsafe practices that may result in **severe personal injury or death.**
CAUTION	Hazards or unsafe practices that may result in **minor personal injury or property damage.**
	Follow directions.
	Do NOT attempt.
	Make sure the machine is grounded to prevent electric shock.
	Cut the power at the circuit breaker.
	Do NOT disassemble.

FOR INSTALLATION | WARNING

Use the power line with the power specifications of the product or higher and use the power line for this appliance only. In addition, do not use an extension line.

- ▶ Extending the power line may result in electric shock or fire.
- ▶ Do not use an electric transformer. It may result in electric shock or fire.
- ▶ If the voltage/frequency/rated current condition is different, it may cause fire.

The installation of this appliance must be performed by a qualified technician or service company.

- ▶ Failing to do so may result in electric shock, fire, explosion, problems with the product, or injury.

Install a switch and circuit breaker dedicated to the air conditioner.

- ▶ Failing to do so may result in electric shock or fire.

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 4 2013-04-17 오전 11:07:25

Fix the outdoor unit firmly so that the electric part of the outdoor unit is not exposed.

▶ Failing to do so may result in electric shock or fire.

Do not install this appliance near a heater, inflammable material. Do not install this appliance in a humid, oily or dusty location, in a location exposed to direct sunlight and water (rain drops). Do not install this appliance in a location where gas may leak.

▶ This may result in electric shock or fire.

Never install the outdoor unit in a location such as on a high external wall where it could fall.

▶ If the outdoor unit falls, it may result in injury, death or property damage.

This appliance must be properly grounded. Do not ground the appliance to a gas pipe, plastic water pipe, or telephone line.

▶ Failure to do so may result in electric shock, fire, an explosion, or other problems with the product.

▶ Make sure to use a socket-outlet with ground.

FOR INSTALLATION ⚠ CAUTION

Install your appliance on a level and hard floor that can support its weight.

▶ Failing to do so may result in abnormal vibrations, noise, or problems with the product.

Confirm that the indoor unit fixing device has been installed by confirming this at an installation engineer.

▶ If the indoor unit fixing device is not installed, the indoor unit may vibrate and fall and this may result in injury.

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 5 2013-04-17 오전 11:07:25

Safety precautions

FOR INSTALLATION ⚠ CAUTION

Install the draining hose properly so that water is drained correctly.

▶ Failing to do so may result in water overflowing and property damage.

When installing the outdoor unit, make sure to connect the draining hose so that draining is performed correctly.

▶ The water generated during the heating operation, by the outdoor unit, may overflow and result in property damage. Especially in winter time, when water freezes and if a block of ice falls, it may result in injury, death or property damage.

FOR POWER SUPPLY ⚠ WARNING

When the circuit breaker is damaged, contact your nearest service center.

Do not pull or excessively bend the power line. Do not twist or tie the power line. Do not hook the power line over a metal object, place a heavy object on the power line, insert the power line between objects, or push the power line into the space behind the appliance.

▶ This may result in electric shock or fire.

FOR POWER SUPPLY ⚠ CAUTION

When not using the air conditioner for a long period of time or during a thunder/ lightning storm, cut the power at the circuit breaker.

▶ Failing to do so may result in electric shock or fire.

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 6 2013-04-17 오전 11:07:25

⚠ WARNING

If the appliance is flooded, please contact your nearest service center.

▶ Failing to do so may result in electric shock or fire.

If the appliance generates a strange noise, a burning smell or smoke, cut-off the power supply immediately and contact the nearest service center.

▶ Failing to do so may result in electric shock or fire.

In the event of a gas leak (such as propane gas, LP gas, etc.), ventilate immediately without touching the power line. Do not touch the appliance or power line.

▶ Do not use a ventilating fan.

▶ A spark may result in an explosion or fire.

To reinstall the air conditioner, please contact your nearest service center.

▶ Failing to do so may result in problems with the product, water leakage, electric shock, or fire.

▶ A delivery service for the product is not provided. If you reinstall the product in another location, additional construction expenses and an installation fee will be charged.

▶ Especially, when you wish to install the product in an unusual location such as in an industrial area or near the seaside where it is exposed to the salt in the air, please contact your nearest service center.

Do not operate the appliance with wet hands.

▶ This may result in electric shock.

Do not strike or pull the air conditioner with excessive force.

▶ This may result in fire, injury, or problems with the product.

▶ Importantly, if the support bracket is excessively impacted, it may become damaged.

Do not place an object near the outdoor unit that allows children to climb onto the machine.

▶ This may result in children seriously injuring themselves.

Do not turn the air conditioner off with the circuit breaker while it is operating.

▶ Turning the air conditioner off and then on again with the circuit breaker may cause a spark and result in electric shock or fire.

After unpacking the air conditioner, keep all packaging materials well out of the reach of children, as packaging materials can be dangerous to children.

▶ If a child places a bag over its head, it may result in suffocation.

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 7 2013-04-17 오전 11:07:25

Safety precautions

FOR USING

⚠ WARNING

Do not insert your fingers or foreign substances into the outlet when the air conditioner is operating or the front panel is closing.

▶ Take special care that children do not injure themselves by inserting their fingers into the product.

Do not insert your fingers or foreign substances into the air inlet/outlet of the air conditioner.

▶ Take special care that children do not injure themselves by inserting their fingers into the product.

Do not touch the air flow blade with your hands during the heating operation. Especially, do not put your finger into the air conditioner.

▶ This may result in electric shock or burns.

Do not use this air conditioner for long periods of time in badly ventilated locations or near infirm people.

▶ Since this may be dangerous due to a lack of oxygen, open a window at least once an hour.

If any foreign substance such as water has entered the appliance, cut-off the power supply and contact the nearest service center.

▶ Failing to do so may result in electric shock or fire.

Do not attempt to repair, disassemble, or modify the appliance yourself.

▶ Do not use any fuse (such as copper, steel wire, etc.) other than the standard fuse.

▶ Failing to do so may result in electric shock, fire, problems with the product, or injury.

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 8 2013-04-17 오전 11:07:25

FOR USING ⚠ CAUTION

Do not place objects or devices under the indoor unit.

▶ Water dripping from the indoor unit may result in fire or property damage.

Check that the installation frame of the outdoor unit is not broken at least once a year.

▶ Failing to do so may result in injury, death or property damage.

Do not stand on top of the appliance or place objects (such as laundry, lighted candles, lighted cigarettes, dishes, chemicals, metal objects, etc.) on the appliance.

▶ This may result in electric shock, fire, problems with the product, or injury.

Do not operate the appliance with wet hands.

▶ This may result in electric shock.

Do not forcefully open the front panel while air conditioner is operating.

▶ This may cause damage to the product.

Do not spray volatile material such as insecticide onto the surface of the appliance.

▶ As well as being harmful to humans, it may also result in electric shock, fire or problems with the product.

Do not drink the water from the air conditioner.

▶ The water may be harmful to humans.

Do not apply a strong impact to the remote controller and do not disassemble the remote controller.

Do not touch the pipes connected with the product.

▶ This may result in burns or injury.

Do not use this air conditioner to preserve precision equipment, food, animals, plants or cosmetics, or for any other unusual purposes.

▶ This may result in property damage.

Avoid directly exposing humans, animals or plants from the air flow from the air conditioner for long periods of time.

▶ This may result in harm to humans, animals or plants.

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

Max current is measured according to IEC standard for safety and current is measured according to ISO standard for energy efficiency.

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 9 2013-04-17 오전 11:07:25

Safety precautions

FOR CLEANING ⚠ WARNING

Do not clean the appliance by spraying water directly onto it. Do not use benzene, thinner, alcohol or acetone to clean the appliance.

▶ This may result in discoloration, deformation, damage, electric shock or fire.

Before cleaning or performing maintenance, cut-off the power supply and wait until the fan stops.

▶ Failing to do so may result in electric shock or fire.

FOR CLEANING ⚠ CAUTION

Take care when cleaning the surface of the heat exchanger of the outdoor unit since it has sharp edges.

▶ To avoid cutting your fingers, wear thick cotton gloves when cleaning it.

Do not clean the inside of the air conditioner by yourself.

▶ For cleaning inside the appliance, contact your nearest service center.

▶ When cleaning the internal filter, refer to the descriptions in the 'Cleaning the air conditioner' section. Failing to do so may result in damage, electric shock or fire.

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 10 2013-04-17 오전 11:07:26

Checking before use

Using indoor unit

Make **sure that curtain does not block the air inlet.**

▶ It may decrease cooling performance by blocking air circulation.

In Cool mode, set the appropriate desired temperature.

▶ If the desired temperature is too low, it may be harmful for human body and power consumption will also increase. Set the desired temperature about 5°C lower than the outdoor temperature.

Use extra heating apparatus during heat mode.

▶ Heating performance of the air conditioner may decrease when the indoor•outdoor temperature drops. Therefore, use extra heating apparatus.

When cooling the room, use air conditioner and fan together to save energy.

▶ When the air conditioner is used with fan, cooling will be more effective and energy can be saved.

When the air conditioner is operating, close the doors and windows.

▶ When the air conditioner is used with open doors and windows, cooling effect will decrease.

▶ If you use the air conditioner for over an hour, open the window to ventilate the air about once every hour.

Install the product away from sunlight or heating devices.

▶ Close the curtain when the sun shines.

▶ Do not use any heating devices during cooling operation. Cooling effect will decrease.

Storing indoor unit

▶ Dry the air conditioner thoroughly by operating Purity mode for 3 to 4 hours.

▶ Stop the operation and disconnect the power or turn off the auxiliary power switch.

CAUTION

• Do not move the product on your own. Pipe may get loose or pipe can get damaged.

Using outdoor unit

Take away covers or barriers.

▶ It may cause product failure, and poor performance in cooling(heating) by blocking air flow.

Installing outdoor unit

▶ Install the outdoor unit in well ventilated area with no sunlight. If sunlight is unavoidable, install a sunshade.

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 11 2013-04-17 오전 11:07:26

Checking before use

Auxiliary power switch

Turn on the auxiliary power switch which is installed separately. (Only applicable for outdoor unit with separate power supply)

NOTE

Auxiliary power switch (NFB, ELB, etc.)

- Auxiliary power switch is not included in the package. Purchase and install it separately.
- Auxiliary power switch is a device for preventing over-current or short circuit. Install it separately near the indoor unit and turn it off when cleaning or when you don't use it for long time.
- If NFB or ELB has already installed in the switch box of the building, you don't need to install auxiliary power switch.

Operation ranges

When the air conditioner operates outside of temperature and humidity range indicated below, protective device may activate and stop the operation.

Mode	Indoor temperature	Outdoor temperature	Indoor humidity
Cool	21℃ ~ 32℃	21℃ ~ 52℃	Relative humidity 80% or less
Dry	21℃ ~ 30℃	21℃ ~ 52℃	-
Heat	0℃ ~ 30℃	-10℃ ~ 24℃	

❋ If the air conditioner operates in cooling mode for long period of time in high humidity area, dew may be formed.

❋ When the outdoor temperature goes down to -10℃, the heating capacity may decrease to 60%~70% according to the usage condition.

Functions available for each model

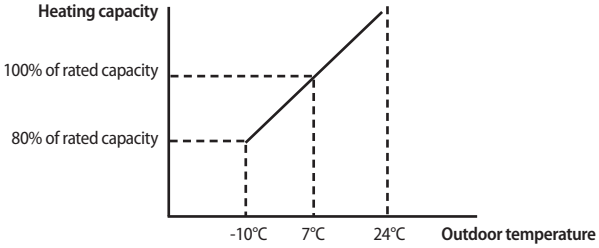
Model Name	Smart Sensor	ZERO Filter	Virus Doctor	Full HD Filter	Lighting
AF28FSSDA✳✳N	●	●	●	●	●
AF28FSZDA✳✳N	-	●	●	●	●

❋ The use of some function buttons on the remote controller may differ depending on the model. When pressing the function buttons on the remote controller which are for a different model from the one purchased, the icon of the selected function will be displayed, but cannot be used with your air conditioner.

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 12 2013-04-17 오전 11:07:26

The heating capacity of heat pump air conditioner on outdoor temperature

If the indoor or outdoor temperature is lower than the rated temperature (Indoor: 20°C, outdoor: 7°C) or the installation condition (Pipe length over standard of 5m, installation place and insulation etc.) is different, heating capacity may decrease even though the air conditioner performs normally. In this case, use extra heating apparatus.

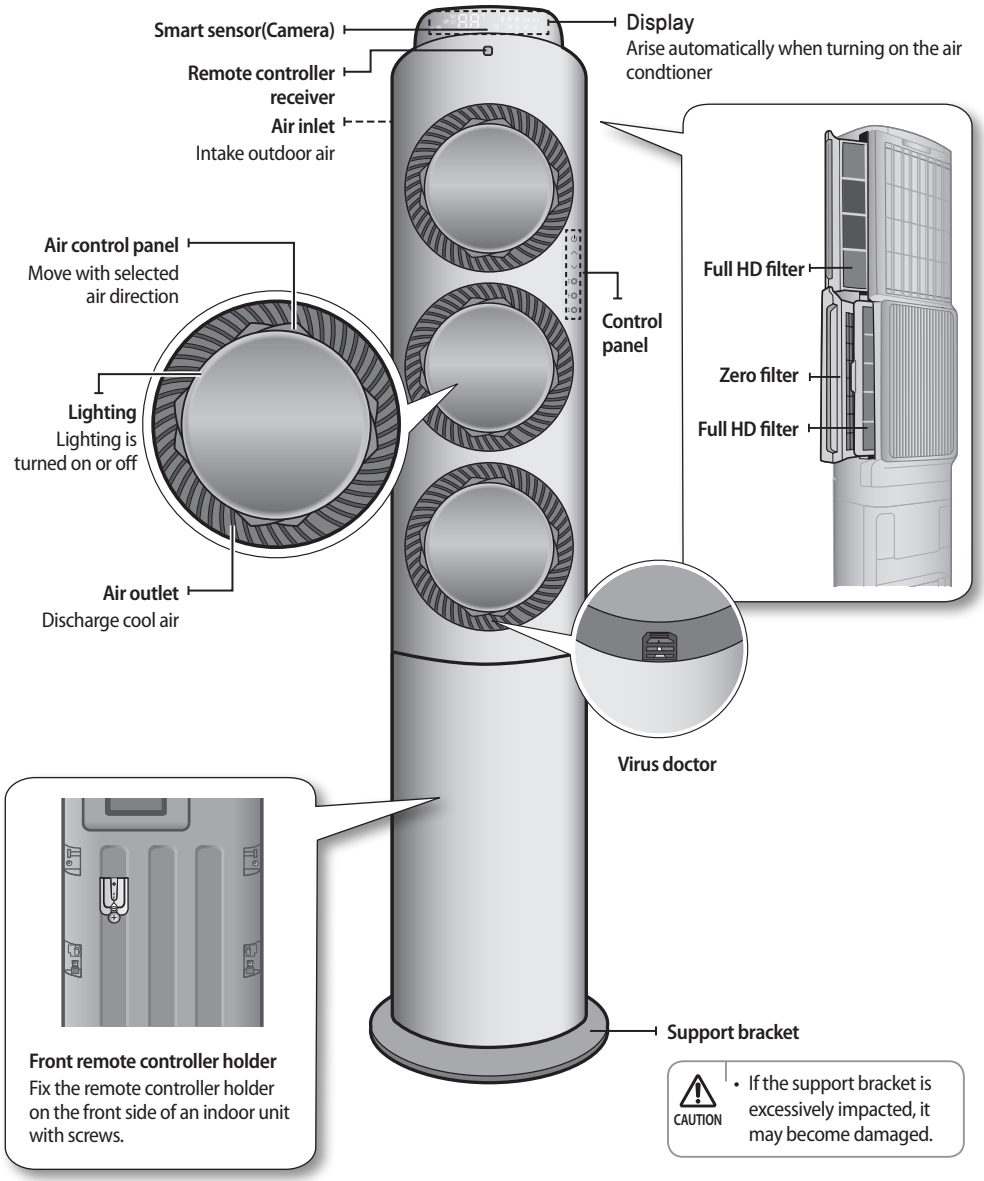


사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 13 2013-04-17 오전 11:07:26

Checking the name of the parts

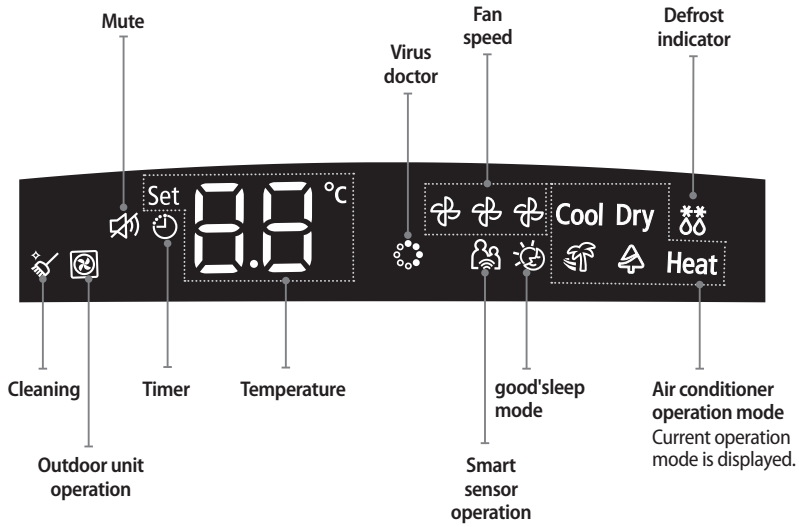
Your air conditioner may slightly look different from illustration depending on the model.

Indoor unit

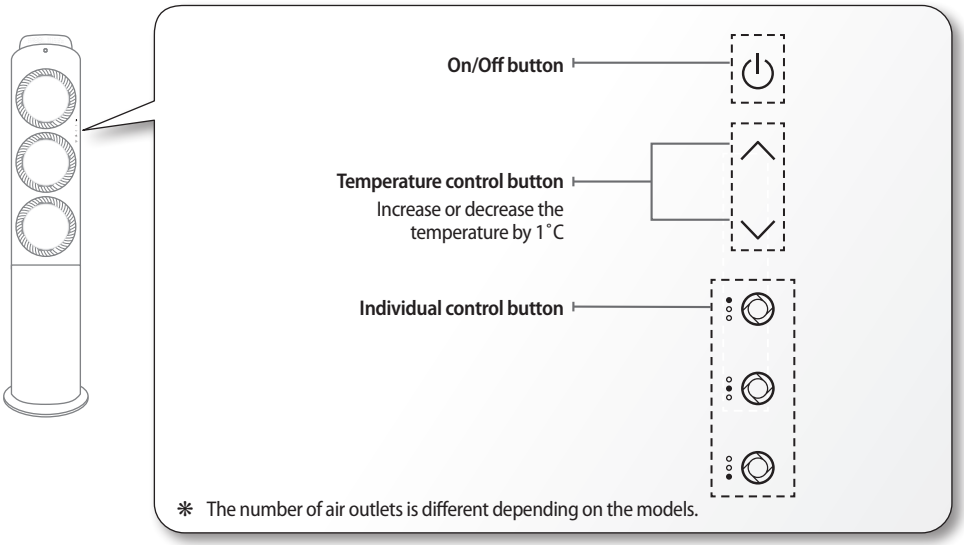


사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 14 2013-04-17 오전 11:07:27

Display



Buttons on contorl panel



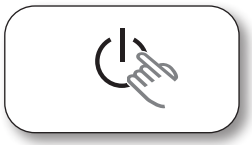
* The number of air outlets is different depending on the models.

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 15 2013-04-17 오전 11:07:28

Checking the name of the parts

Operation with control panel

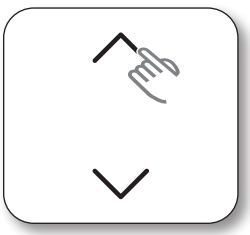
1. Operate the air conditioner by pressing the **Power** ⏻ button.



▶ The air outlets will open in order with melody sound and the air conditioner will operate with auto mode.

Stop Press the **Power** ⏻ button one more time.

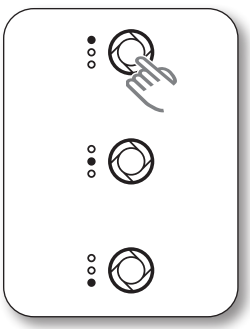
2. Adjust the desired temperature by pressing the [∧], [∨] buttons.



▶ When pressing the button first, the mode of air conditioner will change to cool mode.

▶ You can adjust the desired temperature by 1˚C within the range of 18˚C ~ 30˚C by pressing the [∧], [∨] buttons.

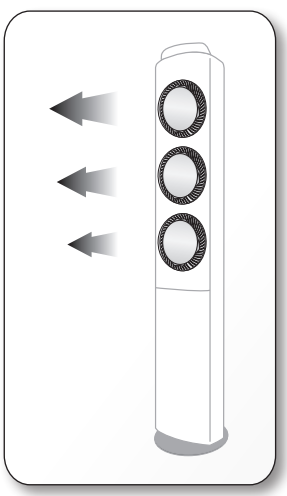
3. Adjust fan height with the three individual air outlet control buttons.



▶ You can adjust the fan height by controlling the air outlet individually.

▶ Individual contol will be canceled when turning the air conditioner off and on.

✻ The fan speed of each air outlet will differ.



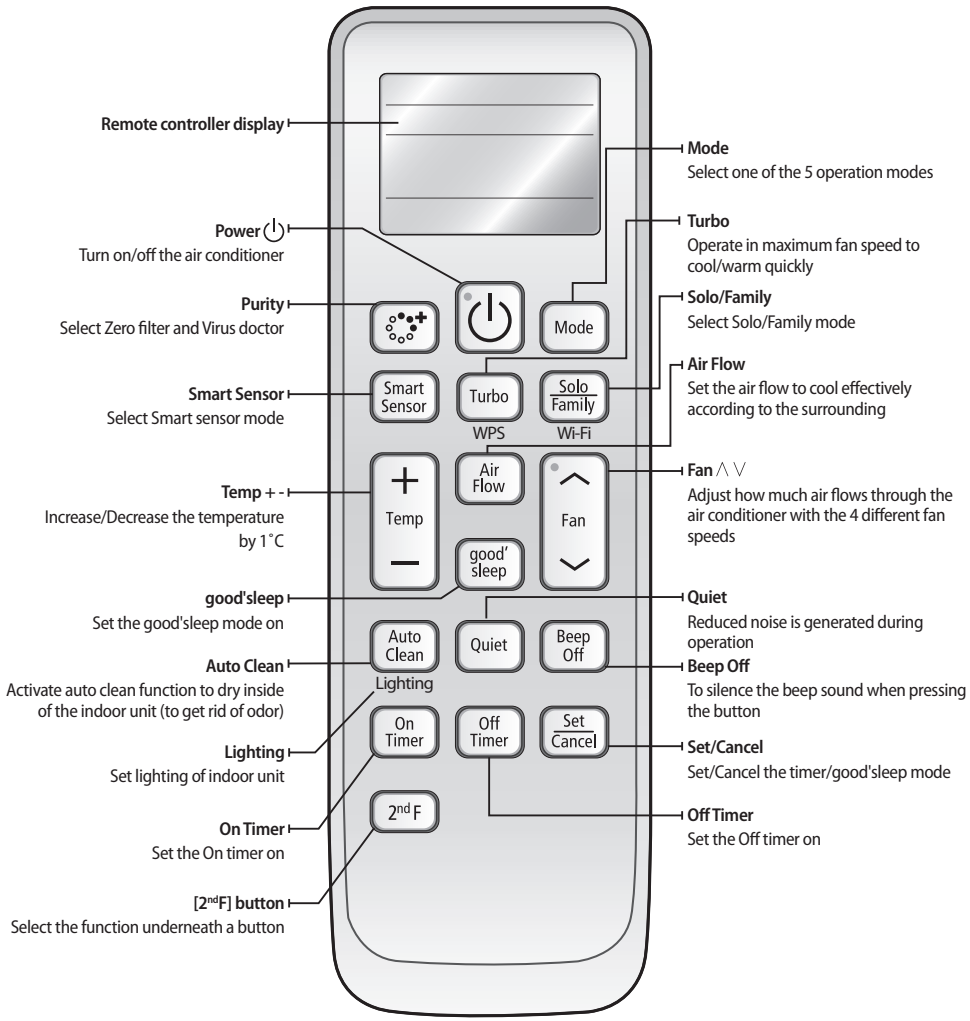
사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 16 2013-04-17 오전 11:07:29

Checking the remote controller

Function may be different depending on the model.

- ▶ Point the remote controller towards the remote control receiver of the unit.
- ▶ When the button is pressed, you will hear ringing or beep sound and Transmit indicator (📶) will appear on the remote controller display.

Remote controller buttons



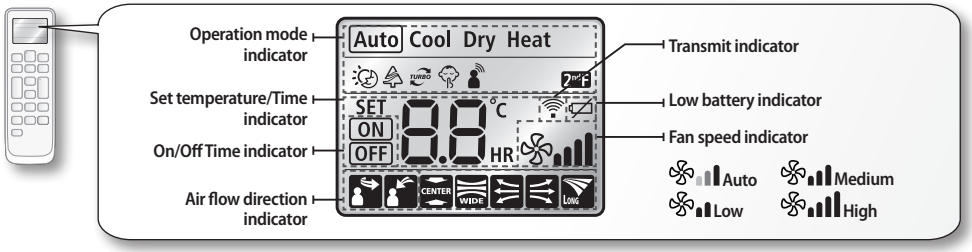
NOTE

- **2ndF button:** When pressing the **2ndF** button, **2ndF** will appear on the remote controller display and you can select the below function of a button.(e.g. When pressing 2nd F ▷ Auto Clean (Lighting), you can select the Lighting function.)
  If you press the **2ndF**, **Power**, **Purity** and the **Set/Cancel** button or don't press any buttons for 10seconds, the display will disappear and you can select the function of the button.

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 17 2013-04-17 오전 11:07:30

Checking the remote controller

Remote controller display



✳ **Left fan and right fan will be displayed as not supported function and reception sound will be ringing. However, the left and right fans will not operate.**

Battery changing time

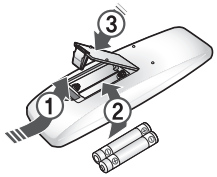
When the battery is exhausted,( )will be displayed in the remote controller display. When the icon appears, change the batteries. The remote controller requires two 1.5V AAA type batteries.

Storing the remote controller

When you do not use the remote controller for a long time, remove the batteries from the remote controller and store it.

Inserting the batteries

1. Open the battery cover.
► Push the ( ) part in the direction of the arrow and lift up the cover.
2. Insert the batteries.
► Check and match the (+), (-) signs and insert them in correct position.
3. Close the battery cover.
► Match the cover and bottom part of the remote controller and press it until you hear click sound.



CAUTION
- Make sure that water is not allowed to enter the remote controller.

NOTE
- There is a possibility that the air conditioner will not operate by remote controller near strong light such as a fluorescent lamp or neon sign. In this case, use the remote controller in front of the remote controller receiver of the indoor unit.
- If other electrical products are operated by the remote controller, call your nearest service center.

Correct disposal of batteries in this product

(Applicable in countries with separate collection systems)

This marking on the battery, manual or packaging indicates that the batteries in this product should not be disposed of with other household waste at the end of their working life. Where marked, the chemical symbols Hg, Cd or Pb indicate that the battery contains mercury, cadmium or lead above the reference levels in EC Directive 2006/66. If batteries are not properly disposed of, these substances can cause harm to human health or the environment.

To protect natural resources and to promote material reuse, please separate batteries from other types of waste and recycle them through your local, free battery return system.

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 18 2013-04-17 오전 11:07:31

Basic operation

Basic operation is an operation mode that can be selected by pressing the **Mode** button.

Auto

In Auto mode, the air conditioner will automatically set the operation mode in Cool/Dry/Fan mode to provide refreshing air throughout your indoor area.

- In Auto mode, the air conditioner will automatically set the operation mode depending on the indoor surrounding.
  - Display on the indoor unit will display Auto (Cool), Auto (Dry) and Auto (Purity)
- In Auto mode, Smart sensor will detect the surrounding area with the camera on the indoor unit. Therefore, air flow direction and the fan speed may different depending on the surrounding condition.
- When selecting individual control in auto mode, the auto mode will be canceled.

Cool

Cool mode is frequently used and you can freely control the temperature, fan speed, and air flow direction in cool mode.

Dry

The air conditioner in Dry mode acts like a dehumidifier by removing moisture from the indoor air. Outdoor unit will repeatedly and automatically turn on/off for maximum dehumidification according to the temperature difference of the current and desired temperature. When the outdoor unit operates, cool air may come out from the indoor unit.

- As you lower the set temperature of a remote controller, the amount of dehumidification will increase.
- As you lower the set temperature of a remote controller, indoor temperature may decrease.

Purity ( )

This operation eliminates harmful contaminants within the air to provide a healthy and clean environment.

- You can select Purity mode by pressing the button while the air conditioner is on or off.
- In purity mode, will appear on the display of an indoor unit and will appear in 1 minute.
- You can press the button during Cool/Dry mode and adjust the desired temperature.
- If you select Purity function in Auto mode, operation mode will change to Cooling (Purity) mode.
- Front panel will be closed slightly when Purity mode is selected solely while the air conditioner is operating.
- When the Purity mode is selected during air conditioner operation, changes in power consumption or operation noise will be very subtle.
- When the air conditioner and Purity mode is on at the same time, you can press the **Power** button to stop the operation.
- When Purity mode is on, you can press the button to stop the Purity operation.

Heat

In heat mode, the indoor temperature, fan speed, and air flow direction can be adjusted at your desire to warm your indoor.

- Just after starting the Heat mode, fan may not operate to prevent cool breeze from coming out.
- Defrost display: When removing frost at the outdoor unit in the Heat mode, icon will be displayed on the indoor unit display and it will be turned off after removing the frost. (When removing the frost during the defrost operation in Heat mode, steam may be generated and the warm breeze may not come out from the indoor unit.)

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 19 2013-04-17 오전 11:07:32

Basic operation

Press the **button to turn on the air conditioner.**

Press the **button to set Solo/Family mode.**

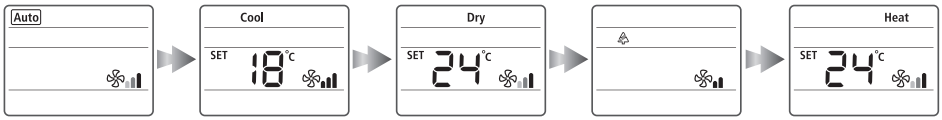
- Solo : Select this function if you are alone in the room and save electricity bill.
- Family : Select this function if there are lots of people in the room or require powerful cooling.

Family mode	Solo mode	Remarks
		The middle air outlet will be closed when the air conditioner reaches the desired temperature in solo mode. When selecting the solo mode in purity mode, the upper and middle air outlets are closed.

○ : Open ● : Close

- Family mode is set as default setting in all operation mode except Auto mode.
- During Auto mode, Solo/Family mode cannot be changed with remote controller.

Press the **button to set the operation mode.**



Press the **button to set the desired fan speed.**

Auto	(Auto) [Operation mode will change to Cool mode when the Fan speed is adjusted.]
Cool	(Auto), (Low), (Medium), (High)
Dry	(Auto)
Purity ( )	(Low), (Medium), (High)
Heat	(Auto), (Low), (Medium), (High)

Press the **button to adjust the desired temperature.**

Auto	Operation mode will change to Cool mode when desired temperature is adjusted.
Cool	You can adjust the desired temperature by 1°C within the range of 18°C~30°C.
Dry	You can adjust the desired temperature by 1°C within the range of 18°C~30°C.
Purity ( )	Temperature adjustment is not possible.
Heat	You can adjust the desired temperature by 1°C within the range of 16°C ~ 30°C.

NOTE

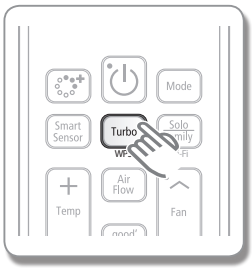
- If you select Purity function additionally while operating in other mode, you can adjust the temperature (except in Auto mode).
- If you press the **Temp** + or - button on the indoor unit control panel while operating in Purity mode, operation mode will change to Cool mode.

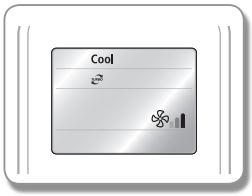
사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 20 2013-04-17 오전 11:07:33

Turbo operation

Turbo function will be helpful to cool/heat your room quickly and effectively.

Press the Turbo button on the remote controller in the Cool/Heat mode.





▶ Turbo indicator appears on the remote controller display and the air conditioner will operate in Turbo function for 30 minutes.

Cancel Press the **Turbo, Mode, Quiet, Smart Sensor** or **good`sleep** button.

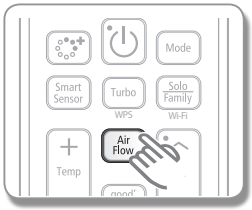
NOTE

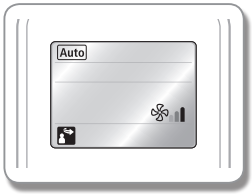
- Turbo function is only available in the Cool/Heat mode.
- If you select the Turbo function during the Quiet/Smart sensor/good`sleep operation, the Quiet/Smart sensor/good`sleep operation will be canceled.
- You can adjust the air flow direction.
- You cannot adjust the desired temperature and fan speed.
- When selecting individual control in turbo mode, the turbo mode will be canceled.

Air flow direction

You can adjust the air flow direction according to the surrounding environment.

Press the Air Flow button to select desired air flow direction.





Indirect	Air will not flow to the person directly but provide coolness rather indirectly.
Direct	Cool(warm) air will flow directly to the person.
Center	Cool(warm) air will come out intensively from the center.
Wide	Air flow blades will move left/right to provide the cool(heat) air to wide range of area.
Long	It is efficient to cool(warm) the area further away.

Operation mode	Supported air flow
Auto	Indirect, Direct
Cool/Dry/Purity/Heat	Center, Wide, Long

NOTE

- Air flow cannot be selected during good'sleep mode.
- When the Long air flow direction is selected, you may change the fan speed from the remote controller and the beep may sound but the air conditioner is not actually operating in selected setting.

MODE	Model Name	Air flow direction
AUTO	AF28FSSDA✳✳N	Indirect, Direct
	AF28FSZDA✳✳N	You cannot adjust the direction of air flow.

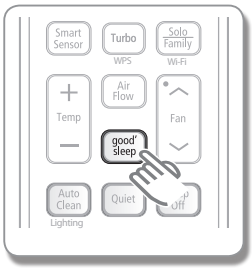
ENGLISH

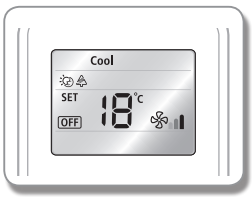
사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 21 2013-04-17 오전 11:07:34

good'sleep operation

For a comfortable sleep, the air conditioner will operate in Fall asleep ▷ Sound sleep ▷ Wake up from good' sleep mode.

When the air conditioner is on and in cool mode.





1. Press the **good'sleep** button on the remote controller to select the good'sleep mode.
   ▶ good'sleep indicator appears and Off timer indicator starts blinking on the remote controller display.
2. Press the **good'sleep** button to set the time.
   ▶ You can set the time in half hourly units from 30 minute ~ 3 hours and hourly units from 3 hour ~ 12 hours.
   ▶ The operation hour can be set to minimum 30 minutes and maximum 12 hours.
   ▶ Default operation hour is set to 8 hours.
3. Press the **Set/Cancel** button to activate it.
   ▶ Off timer indicator stops blinking and set time will be displayed.
   ▶ / icon appears in the display of the indoor unit and good'sleep mode starts operating.
   ▶ If you don't press the **Set/Cancel** button to start the good'sleep mode within 10 seconds, the operation is canceled so you should check the Off indicator on the remote controller display and / icon on the indoor unit display.

Cancel Press the **Set/Cancel** button once again.

Temp	You can set the desired temperature by 1˚C within the range of 18˚C~30˚C.
Fan	Fan speed will be adjusted automatically according to the good'sleep mode.
Air Flow	Air flow direction will be adjusted automatically according to the good'sleep mode.

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 22 2013-04-17 오전 11:07:35

Temperature and fan speed changes in good'sleep mode

1. Fall asleep mode : Provides you with comfortable environment for a good sleep by rapid cooling and hypnagogue expedition breeze.
2. Sound sleep mode : The sound sleep mode adjust temperature and air flow in waves to maintain healthy skin temperature while it aids deep sleep. According to the change of good' sleep operation hours, the sound sleep hour can be longer or shorter.
3. Wake up from good'sleep mode : Provides you with the air flow that adjusts your body temperature to wake you up in a fresh status.

NOTE

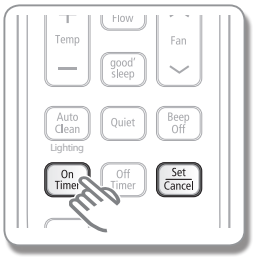
- In first 30 minutes of good'sleep mode, air conditioner will operate in Purity (Cool) mode.
- The recommended set temperature is 25℃~27℃ and 26℃ is the most ideal temperature. If the set temperature is too low, you may feel cold or dry and catch a cold.
- You may not have such a restful sleep if the good'sleep is set too short or long because the default is set to 8-hour-operation.
- If the good' sleep mode is set less than 4 hours, the operation will stop after the set hours. If the good'sleep mode is set over 5 hours, it will run as Wake up stage from the last one hour before it stops automatically.
- If you press the **Solo/Family, Smart Sensor, Turbo, Mode** or **Quiet** button during the good' sleep operation, the operation is canceled and the selected operation starts.
- Only the latest setting timer will be applied between the On Timer/Off Timer and good'sleep functions.
- You can set the Purity function during the good' sleep operation.
- When operating the good'sleep mode, the air outlet will be automatically turned off and on depending on the difference between the current temperature and desired temperature.

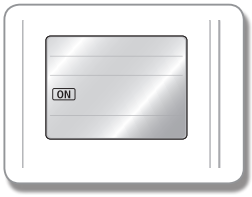
사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 23 2013-04-17 오전 11:07:35

Setting the On/Off timer

You can set the air conditioner to turn on/off automatically at desired time.

Setting On timer while the air conditioner is off / Off timer while the air conditioner is on.

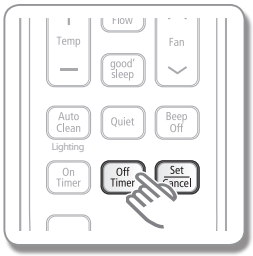


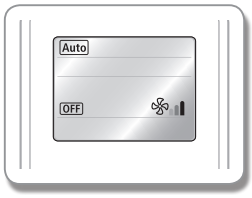


<Setting On timer>

1. Press the **On timer** or **Off timer** button.
▶ On/Off timer indicator will blink on the remote controller display.
2. Press the **On timer** or **Off timer** button repeatedly to set the time.
▶ You can set the time in half hourly units from 30 minute ~ 3 hours and hourly units from 3 hour ~ 24 hours.
▶ The set hour is set to minimum 30 minutes and maximum 24 hours.
3. Press the **Set/Cancel** button to activate it.
▶ On/Off timer indicator will stop blinking and the set time will be displayed.
▶ icon appears in the display of the indoor unit and timer setting will be completed.
▶ If you don't press the **Set/Cancel** button within 10 seconds after selecting the On/Off timer function, the air conditioner will return to the previous status, so you should check the On/Off timer indicator on the remote controller display or icon on the indoor unit display.

Cancel Press the **Set/Cancel** button once again.





<Setting Off timer>

Additional options available in On timer mode	
Mode	You can select from Auto ▷ Cool ▷ Dry ▷ Purity ▷ Heat.
+ Temp −	You can adjust the temperature in Auto/Dry/Heat mode. Operation mode will change to Cool mode if you press the **Temp** + or - button in Auto mode, and you cannot adjust the temperature during Purity mode.
Fan	You cannot adjust the fan speed.

NOTE

- Only the latest setting timer will be applied between the On Timer/Off Timer and good'sleep functions.
- About 10 seconds after setting the On timer, only the On timer indicator will appear on the remote controller display.
- If you press the **Power** button on the indoor unit after setting the On timer function with the remote controller, Timer indicator on the indoor unit display will disappear and the function will be canceled. However, Timer indicator on the remote controller will remain on but the function will not work.

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 24 2013-04-17 오전 11:07:36

Combining On Timer and Off Timer	
If the air conditioner is Off	**If the air conditioner is On**
Preset time on On timer is shorter than Off timer Ex) On timer : 3 hours, Off timer : 5 hours - The air conditioner will turn on after 3 hours from the moment you have set the timer. Your air conditioner will remain on for 2 hours and then turn off automatically.	**Preset time on On timer is longer than Off timer** Ex) On timer : 3 hours, Off timer : 1 hour - The air conditioner will be turned off after 1 hour from the moment you have set the timer. After 2 hours, your air conditioner will turn on.

NOTE
- On timer and Off timer setting time should be different from each other.
- If you press **Set/Cancel** button or **Power** ⏻ button while the both On timer and Off timer are set simultaneously, the functions of both On timer and Off timer are canceled at the same time.

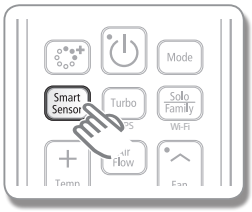
사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 25 2013-04-17 오전 11:07:36

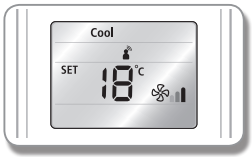
Smart sensor operation

✻ Applicable to AF✻✻FSSD✻✻✻ only

In Cool mode, camera on the top of the indoor unit will detect the movement within the indoor and when there is no movement for certain time, air conditioner will adjust the indoor temperature or turn off power automatically.

Press the Smart Sensor button during Cool mode.





<Remote controller display>

<Indoor unit display>

- icon appears on the remote controller display and the icon appears on the indoor unit display.
- When the movement is not detected for 1 hour, temperature will be adjusted automatically.
- When the movement is not detected for 2 hours, air conditioner will turn off automatically.

Cancel Press the **Smart Sensor** button once again.

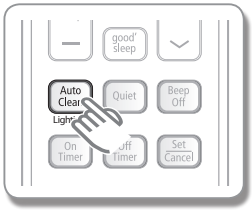
NOTE

- Smart sensor will detect about 25° on the left and right side of the product.
- In dark places, camera cannot detect the movement and Smart sensor function may not work properly.
- Smart sensor mode may get disturbed by change of light or movement change caused by devices such as TV, fan...etc.

Lighting function

You can create fresh mood of indoor room with soft light by turning the light on.

After pressing the 2nd F button and checking the 2nd F indicator on the remote controller display, press the Auto Clean Lighting button to adjust the lighting level of an indoor unit.



<Remote controller display>

- Each time you press the **Lighting** button during air conditioner operation, the lighting level will be adjusted. (The lighting function will work only with opened air outlet.)
- When changing the lighting level, press the **2ndF** button first and then press the **Lighting** button repeatedly to adjust the desired level.

Press times	Brightness
1	Level 1 (Low)
2	Off
3	Level 3 (High)
4	Level 2 (Medium)

NOTE

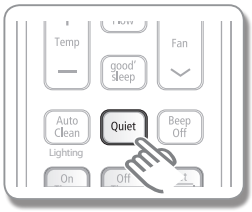
- The lighting figure may change depending on the status of air conditioner operation.
- The lighting figure will differ depending on the models.
- The use of lighting function will be different depending on the model.
- When the air conditioner is turned off, the reception sound will be ringing from the air conditioner but the lighting function will not operate.

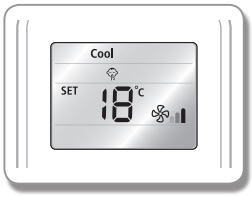
사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 26 2013-04-17 오전 11:07:37

Quiet operation

This function can reduce the noise generated during air conditioner operation.

Press the Quiet **button to select Quiet function.**





▶ icon will appear on the remote controller display.

Cancel Press the **Quiet**, **Mode** or **Fan** ∧, ∨ button once again.

Temp	You can adjust the desired temperature by 1°C within the range of 18°C~30°C.
Fan	Since the fan speed is fixed as (Auto), pressing the **Fan** ∧, ∨ button will cancel the Quiet operation.
Air Flow	You can set the air flow direction.

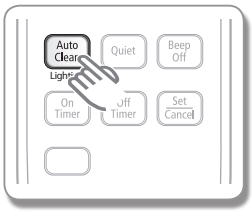
NOTE

- You can select the Quiet operation while the air conditioner is in cool mode. If you select the Quiet operation during the Smart sensor/Turbo/good'sleep operation, corresponding operation will be canceled.
- When selecting individual control in quiet mode, the quiet mode will be canceled.

Auto clean operation

Auto clean function will prevent mold from growing by eliminating the moisture inside of the indoor unit.

Press the Auto Clean **button.**



When the air conditioner is turned on,

▶ icon appears in the display of the indoor unit and the Auto cleaning function will run for 3 minutes after air conditioner stops operating.

When the air conditioner is turned off,

▶ icon appears in the display of the indoor unit and the Auto cleaning function will run for 3 minutes.

Cancel Press the **Auto Clean** button once again.

NOTE

- The Auto clean indicator appears only on the indoor unit display.
- If you select another mode during auto clean operation, the selected mode will start its operation. When the selected mode finishes, the auto clean function will be initialized and run again for 3 minutes.

ENGLISH

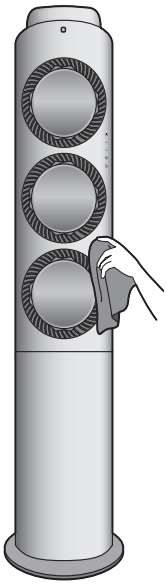
사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 27 2013-04-17 오전 11:07:39

Cleaning the air conditioner

CAUTION
- Make sure to turn off the circuit breaker when cleaning the air conditioner.

Cleaning the indoor unit

- Wipe the surface of the unit with a slightly wet or dry cloth when needed.
- Brush away the dust on the narrow gap of air conditioner.

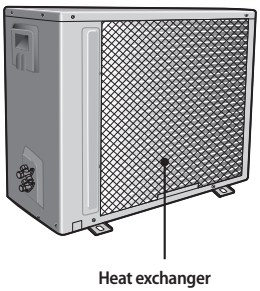


NOTE
- Since the panel of the product can be scratched easily, use the exclusive cleaning cloth (micro fiber) for cleaning. Wet the exclusive cleaning cloth (micro fiber) with little bit of water, and make sure to remove any foreign object on the clowth since the product can be scratched easily.
- When cleaning the indoor unit, use soft and slightly wet cloth(micro fiber) because the indoor unit panel is easily scratched. Dust off the cloth before cleaning to prevent indoor unit from being scratched by the foreign material on the cloth.
- If it is difficult to clean the indoor unit heat exchanger on your own, contact service center.

CAUTION
- Do not clean the display using alkaline detergent.
- Do not clean the surface with sulfuric acid, hydrochloric acid or organic solvents (thinner, kerosene, acetone) or attach stickers. It may damage the surface of the unit.

Cleaning the outdoor unit heat exchanger

- When dust accumulates on the heat exchanger, it may decrease cooling(heating) performance. Therefore, clean it regularly.
- Spray water to clean the dust.



NOTE
- If it is difficult to clean the outdoor unit heat exchanger on your own, contact service center.

CAUTION
- Be careful with the sharp edges on the outdoor unit heat exchanger.

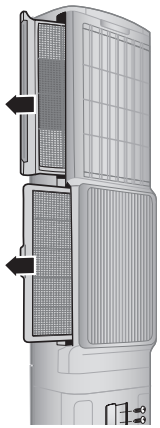
사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 28 2013-04-17 오전 11:07:40

Cleaning the Full HD filter

Full HD Filter filters the big dust of incoming air.

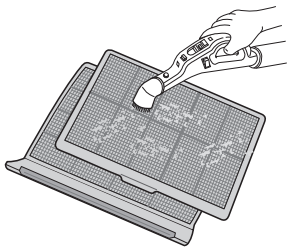
Pull out the Full HD filter in the arrow direction.

▶ Before pulling out the lower Full HD filter, take out the Zero filter first.



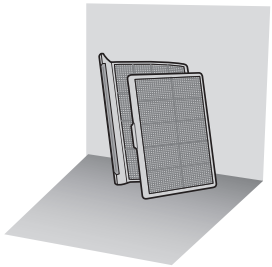
Remove dust with a vacuum cleaner or running water.

▶ When the dust is serious, clean the filter with warm water which contains a neutral detergent. However, when rubbing out the filter with a brush, the Full HD filter may be damaged.



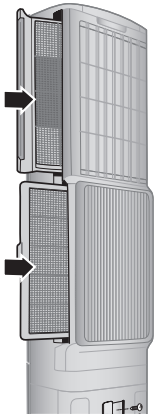
Dry the filter completely in the shade.

▶ When drying the Full HD filter, make sure the filter is not exposed to direct sunlight.



Push the Full HD filter to the end in the arrow direction so that it can be completely fixed.

▶ After pushing the lower Full HD filter, push the Zero filter.



NOTE

• Clean the Full HD filter every 2 weeks. Cleaning term may differ depending on the usage and environmental conditions.

ENGLISH

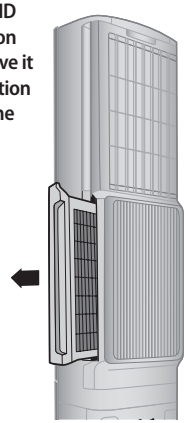
사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 29 2013-04-17 오전 11:07:40

Cleaning the air conditioner

Cleaning the Zero filter

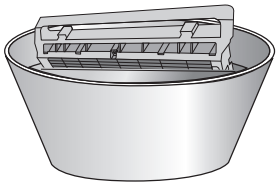
Zero filter traps small dust particles within the air. It is washable and it can be used semi-permanently.

Remove the lower Full HD filter. Grasp the handle on the Zero filter and remove it by pulling it in the direction of the arrow shown in the figure.



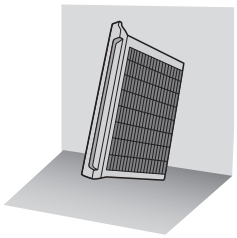
Soak the filter in the water and shake it up and down for few times.

- ▶ Do not disassemble the Zero filter when cleaning it.
- ▶ If the accumulated dust is heavy, soak the filter in water mixed with detergent and shake it in water for 30 minutes until it is cleaned.

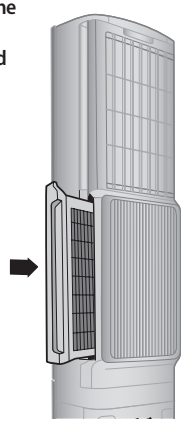


Dry the filter in a ventilated area.

- ▶ Put the filters vertically for 12~24 hours when drying (Drying time can be shorter depending on the condition)
- ▶ Do not dry the Zero filter in direct sunlight. It may get deformed.



Push the Zero filter in the direction of the arrow and make sure it is fixed in correct position. Put the lower Full HD filter back.



CAUTION

- Be careful with the sharp rear surface of the Zero filter. You may cut in your hands.

NOTE

- Clean the Zero filter every 3 months. (Based on 8 hours of use per day.) Cleaning term may differ depending on the usage and environmental conditions.

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 30 2013-04-17 오전 11:07:41

Troubleshooting

Refer to the following chart if the air conditioner operates abnormally. This may save time and unnecessary expenses.

PROBLEM	SOLUTION
The air conditioner does not work at all.	• Check power status and then operate the air conditioner again. • Switch on the circuit breaker and then operate the air conditioner again. • Check if the air conditioner is turned off by Off timer or Smart sensor. Operate the air conditioner again by pressing the **Power** ⏻ button.
Front panel remains open.	• Check if there is a power failure. • Check if there is any object blocking the front panel from closing. Remove the object and then operate again.
The temperature adjustment is not working.	• Check if you have selected Turbo/Purity mode. In these modes, temperature adjustment is not available.
Cool air does not come out of the air conditioner.	• Check if the set temperature is higher (in Cool mode)/ lower (in Heat mode) than the current temperature. Press the **Temp** + or - button to set the temperature lower (in Cool mode)/ higher (in Heat mode than the current temperature. • Check if the Full HD Filter is blocked by dirt. If there is a lot of dust on the Full HD Filter, cooling (heating) performance may decrease. Clean them frequently. • Check if the outdoor unit is covered or installed near the obstacle. Take the cover off and take the obstacle away. • If you want to operate the air conditioner in the sunlight, cover the outdoor unit using curtains or etc. • If ice is formed on the outdoor unit during the heat mode, warm breeze will not be generated. The defrost operation will start automatically. - The defrost operation time may change depending on the status of ice formation. • If the doors or windows are open, it may cause poor cooling performance. Close the doors and windows. • If you have selected Purity mode without selecting other mode, cool air does not come out of the air conditioner. Press the **Mode** button to select other mode. • Check if the pipe length is too long. When the pipe length exceeds maximum allowable pipe length, cooling (heating) performance may decrease.

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 31 2013-04-17 오전 11:07:41

Troubleshooting

PROBLEM	SOLUTION
Air flow adjustment is not working.	• Check if you have selected good'sleep mode. In this mode, you cannot adjust the air flow direction since it is set to Auto.
Fan speed adjustment is not working.	• Check if you have selected Dry/Turbo/good'sleep mode. In these modes, fan speed is set to Auto and you cannot adjust the fan speed.
Remote controller is not working.	• Check if your batteries are depleted. • Make sure nothing is blocking your remote controller sensor. • Check whether there are strong lighting apparatus near the air conditioner. Strong light which comes from fluorescent bulbs or neon signs may interrupt the electric waves. • Stand towards the center of the product, point the remote controller towards the remote control receiver and press the button.
Timer function does not work.	• Check if you have pressed the **Set/Cancel** button on the remote controller after setting the time.
The air conditioner is not turned off.	• Check the air conditioner is in auto cleaning mode. When turning the air conditioner off after using the auto cleaning function, it will take 3 minutes to turn the air conditioner off.
Odors permeate in the room during operation.	• Odor may permeate depending on the surrounding environment or operating condition. Ventilate the indoor air. • Check if the appliance is running in a smoky area. Ventilate the room or operate the air conditioner in Purity mode for 1~2 hours. (We do not use smelly components in the air conditioner.) • Clean the Zero filter and Full HD Filter if they are dirty.

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 32 2013-04-17 오전 11:07:41

PROBLEM	SOLUTION
Error is indicated	• When error indications appear on the indoor unit display, press the **Set/Cancel** button and **Fan** ∨ button for 3 minutes. If error indications appear again, contact a service center. • When E1-01, E2-01, and E2-02 appear on the indoor unit display, check the power cable of outdoor unit is connected. If the connection is ok, turn the indoor unit off and on again. • When E1-03, E1-05, E1-21, E1-22, E1-23, E1-28, E1-29, E1-54, E1-55, E1-61, E1-63, E1-76, E1-87, E1-98, E2-03, E2-21, E2-37, E2-46, E2-51, E2-61, E3-20, E4-01, E4-04, E4-16, E4-19, E4-40, E4-41, E4-58, E4-61, E4-62, E4-63, E4-64, E4-65, E4-66, E4-67, E4-68, E4-69, E4-70, E4-71, E4-72, E4-74, E4-83, E4-85, E5-00, E5-54 are blinking, the air conditioner has a problem. In this case, contact a service center.
Noise is generated	• Depending on the status of the air conditioner usage, noise can be heard when refrigerant flow movement changes. It is normal. • Cracking sound may ocuur during the operation of the air conditioner, push the Zero filter to the end.
Steam is generated from the outdoor unit	• When the air conditioner is in heat mode in the winter, steam may generate during the frost removing operation. Therefore, do not worry about fire with this.
Water is dropping from the outdoor unit piping connection	• Water may be generated because of the temperature difference. It is normal.

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 33 2013-04-17 오전 11:07:42

Open Source Announcement

The software included in this product contains copyrighted software that is licensed under the GPL/LGPL.
You may obtain the complete Corresponding Source code from us for a period of three years after our last shipment of this product by sending email to:

oss.request@samsung.com

If you want to obtain the complete Corresponding Source code in the physical medium such as CD-ROM, the cost of physically performing source distribution may be charged.
This offer is valid to anyone in receipt of this information.

GPL Software :
ACL, Alsa Utils, Attr, BusyBox, Das U-boot, Duma, E2fsprogs, Gdb, Linux kernel, Ltrace, Mtd-utils, Wireless Tools, Wpa_supplicant

LGPL Software :
Mini-XML, Alsa Libraries, Arm-eabi-toolchain, Glibc, Glibc-ports, Libelf, Tslib

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991
Copyright (C) 1989, 1991 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty)

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 34 2013-04-17 오전 11:07:42

and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 35 2013-04-17 오전 11:07:42

Open Source Announcement

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

one line to give the program's name and an idea of what it does.
Copyright (C) yyyy name of author

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software
Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) year name of author

Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'. This is free software, and you are welcome to redistribute it under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright
interest in the program `Gnomovision'
(which makes passes at compilers) written by James Hacker.

signature of Ty Coon, 1 April 1989
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

- GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999
Copyright (C) 1991, 1999 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 36 2013-04-17 오전 11:07:42

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) The modified work must itself be a software library.

b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 37 2013-04-17 오전 11:07:42

when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 38 2013-04-17 오전 11:07:42

copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY 15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 39 2013-04-17 오전 11:07:42

Open Source Announcement

INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

one line to give the library's name and an idea of what it does.
Copyright (C) year name of author

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

signature of Ty Coon, 1 April 1990
Ty Coon, President of Vice

That's all there is to it!

- Expat License

Copyright (c) 1998, 1999, 2000 Thai Open Source Software Center Ltd and Clark Cooper

Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006 Expat maintainers.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

- Uthash

Copyright (c) 2005-2013, Troy D. Hanson
http://uthash.sourceforge.net

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

- OpenSSL

This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (http://www.openssl.org/)

This product includes cryptographic software written by Eric Young (eay@cryptsoft.com)

LICENSE ISSUES
==========

The OpenSSL toolkit stays under a dual license, i.e. both the conditions of the OpenSSL License and the original SSLeay license apply to the toolkit. See below for the actual license texts. Actually both licenses are BSD-style Open Source licenses. In case of any license issues related to OpenSSL please contact openssl-core@openssl.org.

- OpenSSL License

==========

Copyright (c) 1998-2008 The OpenSSL Project. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 40 2013-04-17 오전 11:07:42

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

All advertising materials mentioning features or use of this software must display the following acknowledgment:

"This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (http://www.openssl.org/)"

The names "OpenSSL Toolkit" and "OpenSSL Project" must not be used to endorse or promote products derived from this software without prior written permission. For written permission, please contact openssl-core@openssl.org.

Products derived from this software may not be called "OpenSSL" nor may "OpenSSL" appear in their names without prior written permission of the OpenSSL Project.

Redistributions of any form whatsoever must retain the following acknowledgment:

"This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (http://www.openssl.org/)"

THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT "AS IS" AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OpenSSL PROJECT OR ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

==========

This product includes cryptographic software written by Eric Young (eay@cryptsoft.com). This product includes software written by Tim Hudson (tjh@cryptsoft.com).

- Strace

Copyright (c) 1991, 1992 Paul Kranenburg <pk@cs.few.eur.nl>

Copyright (c) 1993 Branko Lankester <branko@hacktic.nl>

Copyright (c) 1993 Ulrich Pegelow <pegelow@moorea.uni-muenster.de>

Copyright (c) 1995, 1996 Michael Elizabeth Chastain <mec@duracef.shout.net>

Copyright (c) 1993, 1994, 1995, 1996 Rick Sladkey <jrs@world.std.com>

Copyright (C) 1998-2001 Wichert Akkerman <wakkerma@deephackmode.org>

All rights reserved

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

- Iperf

Copyright (c) 1999-2007, The Board of Trustees of the University of Illinois

All Rights Reserved. Iperf performance test

Mark Gates
Ajay Tirumala
Jim Ferguson
Jon Dugan
Feng Qin
Kevin Gibbs
John Estabrook
National Laboratory for Applied Network Research
National Center for Supercomputing Applications
University of Illinois at Urbana-Champaign

http://www.ncsa.uiuc.edu

Permission is hereby granted, free of charge, to any person obtaining a copy of this software (Iperf) and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimers.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimers in the documentation and/or other materials provided with the distribution.

Neither the names of the University of Illinois, NCSA, nor the names of its contributors may be used to endorse or promote products derived from this Software without specific prior written permission. THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE CONTIBUTORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

- JPEG

This software is based in part on the work of the Independent JPEG Group.

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 41 2013-04-17 오전 11:07:43

Safety precautions

Carefully read the content of this manual before installing the air conditioner and store the manual in a safe place in order to be able to use it as reference after installation.

WARNING	Hazards or unsafe practices that may result in **severe personal injury or death.**
CAUTION	Hazards or unsafe practices that may result in **minor personal injury or property damage.**

WARNING

- Installation must be carried out by a qualified installer.
  - Do not attempt to repair, move, modify or reinstall the unit on your own since such act may cause fire, electric shock or water leakage.
- Install the unit in a place where it is strong enough to hold the product weight.
  - When installed in place where it is not strong enough to withhold the product weight, the unit could fall and cause injury.
- The unit should be installed in accordance with the National Electrical regulations by a qualified installer and leased circuit must be used.
  - Lack of capacity on leased circuit or improper installation may cause electric shock or fire.
- Use the specified wires to connect the indoor and outdoor units securely and attach the wires firmly to the terminal block connecting sections so that the pressure is not applied to the sections.
  - Inappropriate connection and fixing could cause fire.
- Attach the electrical cover to the indoor and outdoor unit securely without any gaps.
  - If there are any gaps, there is potential risk of fire or electric shock due to dust or water.
- Make sure to use the part provided or specified parts for the installation work.
  - The use of defective parts could cause an injury or leakage of water due to a fire, an electric shock, the unit falling, etc.
- Make sure that the refrigerant gas does not leak after completing the installation.
  - If the refrigerant gas comes into contact with the heating apparatus, harmful gas will be generate.
  - If the refrigerant gas of the indoor unit leaks and comes into contact with the fan heater, space heater or stove, harmful gas will be generated.
- Ensure that a proper ground wire is in place.
  - Do not connect the ground wire to a gas pipe, water pipe, lightning rod or telephone grounding. Defective grounding could cause electric shock.
- Do not install the unit in a place where it is exposed to inflammable gas leakage.
  - When leaked gas accumulates around the product, it may cause fire.
- Perform the installation securely referring to the installation manual.
  - Incomplete installation could cause water leakage, electric shock or fire.
- Check first the following situations before starting the operation during the installation.
  - The pipe must be properly connected and make sure there is no leakage.
  - Service valves must be open. If compressor is operated with the service valve closed, excessive pressure may damage parts of the compressor. If leakage occurs on any of the connections, air inflow may also cause excessive pressure that could lead to explosion.

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 42 2013-04-17 오전 11:07:43

WARNING

- ▶ Do not assemble the power cord on your own, use two cables together to extend the cable length or tangle the cable.
  - Bad connection, isolation and over voltage may cause fire or electric shock.
- ▶ Make sure to turn off the main power when setting up the indoor unit electrical circuit or power cords.
  - There is a risk of electric shock.
- ▶ Install a ground leakage breaker depending on the installation place.
  - If not, it may cause electric shock.
- ▶ Never use the components and pipes for R-22 refrigerant on the models using R-410A refrigerant.
  - If the oil used for R-410A gets mixed with the mineral oil for R-22, it will get hydrolyzed and cause product damage.

CAUTION

- ▶ Check if the product is in good shape before the installation.
  - Do not install the product with the damage which occurred during shipment.
- ▶ Read the installation manual thoroughly before installing the air conditioner.
- ▶ Before installing the air conditioner, make sure to discuss the location selection and the precautions on the installation manual with the user.
- ▶ Perform the drainage/piping work securely according to the installation manual.
  - If not, water could drip from the unit and household goods could get wet and damaged.
- ▶ Fasten a flare nut with a torque wrench as specified in this installation manual.
  - When fastened too tightly, a flare nut may break after a long period of time and cause refrigerant leakage.
- ▶ Wear thick gloves during the installation process.
  - If not, personal injury may occur due to the air conditioner parts.
- ▶ Be careful not to touch the outdoor unit inlet or aluminium pins.
  - You may get personal injury.
- ▶ Do not install the outdoor unit in a place where animals could live.
  - If an animal comes into contact with the electric parts, damage or fire may occur. In addition ask the customer to maintain a clean installation place around it.
- ▶ After completing the installation, run the trial operation. If no error occurs, explain to the customer how to use and clean the air conditioner according to the user's manual. In addition give the installation manual and the user's manual to the customer.
- ▶ Do not open the front panel of the indoor unit during operation.
  - It may cause damage to the product.
- ▶ Check the product before installing it.
  - Check the unit for damage that may have taken place during transportation and do not install or use damaged equipment.
- ▶ All of the manufacturing and packaging material used for your new appliance are compatible with the environment and can be recycled.
- ▶ This product is an air conditioning system and contains a refrigerant that must be recovered and disposed of in an appropriate way by qualified personnel.
  - At the end of the life cycle, take it to a proper recycling or disposal center or return it to the dealer so that it can be disposed correctly.

✳ **When customer claim is caused by not following above safety precaution, installer is responsible for the claim. (Installer is responsible for the service charges.)**

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 43 2013-04-17 오전 11:07:43

Required tools

General tools

① Vacuum pump
② Torque wrench
③ Pipe cutter
④ Reamer
⑤ Pipe bender
⑥ Spirit level
⑦ Screw driver
⑧ Spanner
⑨ Drill
⑩ L wrench
⑪ Measuring tape

Tools for test operations

① Thermometer
② Resistance meter
③ Electroscope

Choosing the installation location

Indoor unit

- ▶ Install the unit at a place close to the wall facing the outside as it is necessary to perform piing connection with the outdoor unit.
  - It is effective to install the unit at the place where air flow is not blocked and the cool air can be distributed throughout the room.
- ▶ Install the unit at a place where there is no obstacle against the wind around the air intake and air outlet.
- ▶ Avoid a place near the door which is frequently used by people.
- ▶ Avoid a place exposed to direct sunlight. (If it is unavoidable, install a sunshade).
  - Surface of the product may get discolored.
- ❋ Install it on even ground.
  - Make sure there is no abnormal operation or noise generation.
  - If installed on uneven ground, water may overflow.

Outdoor unit

- ▶ Avoid a place exposed to direct sunlight. (If it is unavoidable, install a sunshade).
- ▶ A place free from the risk of combustible gas leakage.
- ▶ A place which can bear the weight of the unit.
- ▶ A place which can bear the fixing strength of the outdoor unit.
- ▶ Avoid a place exposed to oil (including machine oil)
- ▶ Avoid a saline place.
- ▶ Avoid a place exposed to sulfide gas (hot spring zone).
  - When installing the unit at such special environmental conditions, it may cause trouble to the product. When it is unavoidable, special maintenance is required.
- ▶ A place where discharged air and noise of the outdoor unit does not disturb the neighborhood.
  - Take extra care not to cause any inconvenience to your neighbors when installing the unit on the borderline with your neighborhood.
- ▶ A place where strong wind does not head against the air outlet of the outdoor unit.
  - If a strong wind heads directly against the air outlet at the time of cool operation, a safety device can be operated.
- ❋ Do not install the outdoor unit on a unstable places (such as rooftop). If installation is unavoidable, make sure that you fixed the unit firmly. Avoid places where strong wind or storm can possibly knock down the product (such as seashore or place with frequent storm)

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 44 2013-04-17 오전 11:07:43

Indoor/outdoor unit installation diagram

Installation space for floor type indoor unit

- To minimize the waste of space due to installation, install the indoor unit as shown in below figure.

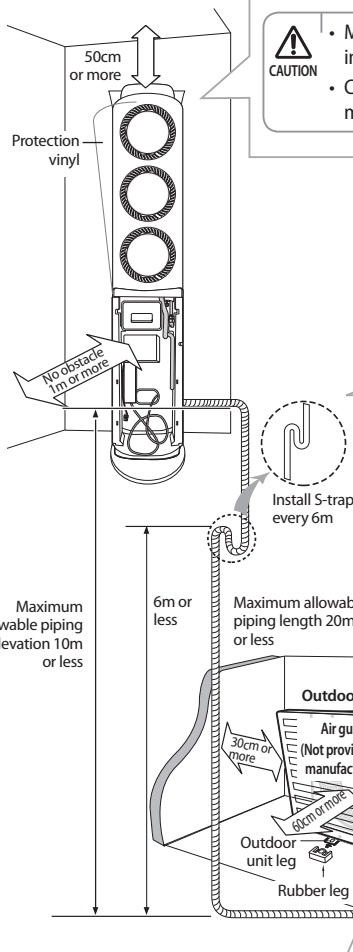
- **Top view**

✻ After completing the installation, remove the protection vinyl. (Be careful of static electricity).

✻ After completing the installation, remove the protective filament film on the product.

CAUTION

- Make sure that there are no obstacles (such as curtains etc.) blocking air inlets of the indoor unit.
- Clear space on the right side of the indoor unit for possible filter maintenance in the future.



Piping length for indoor/outdoor unit installation

- Refer to illustration on the left for maximum allowable piping length and elevation.
- Since product performance and lifespan may decrease as piping length becomes longer, try to minimize the piping length but make sure it is over 5m.
- Select the installation location where you can keep the piping bending to maximum 10 spots.
- Stated cooling performance is based on product with 5m piping.

CAUTION

- One S-trap must be installed on the low pressure pipe up to 6m of piping elevation. For piping elevation that exceeds 6m, install S-trap every 6m.

When air guide needs to be installed to prevent the warm discharge air from disturbing the pedestrian, refer to the illustration on the right side for installation.

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 45 2013-04-17 오전 11:07:44

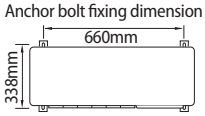
Indoor/outdoor unit installation diagram

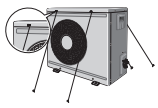
Fixing outdoor unit

Follow below method to firmly fix the outdoor unit.

- ▶ Using rubber leg
  - Put the rubber leg to the outdoor unit leg. (Refer to illustration on the right.)
- ▶ Using anchor bolt
  - On a flat, rigid ground, use 4 anchor bolt (M10) to fix the unit. (Anchor bolt should be purchased separately.)
  - Select the anchor bolt that is long enough to securely fix the outdoor unit.

Anchor bolt fixing dimension



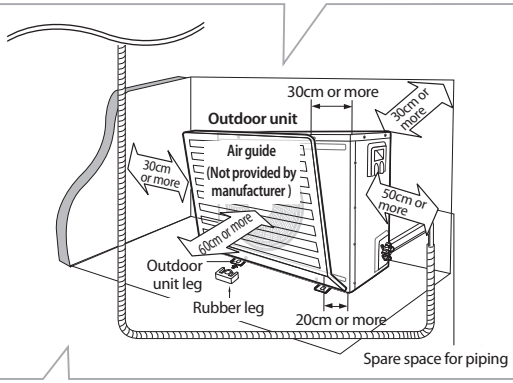


✻ If you need to ensure the outdoor unit from falling, use wires to fix it firmly.

- Loosen the 4 screws from the top cover of the outdoor unit.
- Put the wire around the screws and fasten the screws.
- Fix the wire on the ground.

CAUTION

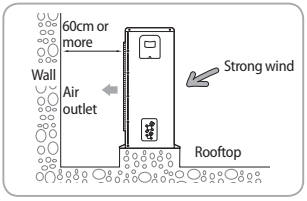
- When the outdoor unit is not firmly fixed, it may fall and cause personal injury or property damage.
- When the outdoor unit is installed in water-proofed rooftop, fix the wire on the wall.

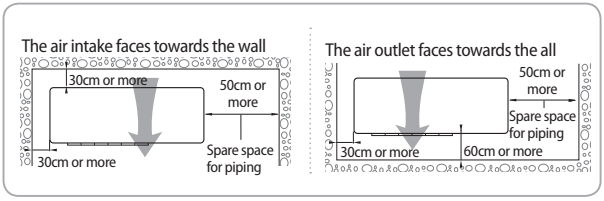


Installation space for outdoor unit

Refer to following examples for wind protection.

- ▶ When installing in the street with lots of buildings, install the product parallel to the street.
- ▶ In the places with strong wind, install the product with air outlet facing the wall.

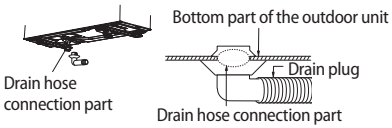



The air intake faces towards the wall
30cm or more
50cm or more
30cm or more
Spare space for piping
The air outlet faces towards the all
50cm or more
Spare space for piping
30cm or more
60cm or more

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 46 2013-04-17 오전 11:07:45

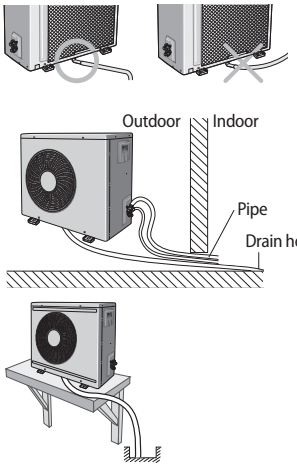
Connecting the outdoor unit drain hose

- ▶ Push the drain plug into the drain hose connection part as far as possible.
- ▶ Push the drain hose into the plug as far as possible and check to make sure water is drained properly.



CAUTION

- Water may leak if the drain hose is not connected properly. Therefore, check for water leakage after the installation.
- Frost may form during heating operation. Make sure to check for proper drainage in defrost operation.
- Do not install on the place where bottom part of the outdoor unit is at lower level than the drain hose.
- When installing the drain hose for draining the outdoor unit condensation of the cooling/heating product, make sure to install it so that it allows natural draining.
- When fixing the product, make sure that the product is level.
  - When the product is not in level, noise may generate due to vibration.
  - When the product is not in level, condensation that forms during heating operation may overflow instead of being drained through the drain hose and cause property damage.



ENGLISH

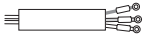
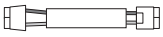
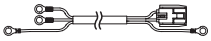
사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 47 2013-04-17 오전 11:07:46

Accessories

Indoor unit accessories

Remote controller	Fixing bracket for indoor unit	Batteries	Remote controller holder
M4X16 screws	**User & installation manual**	**Cleaning cloth (micro fiber)**	

Outdoor unit accessories

Rubber leg	Main power cable	Indoor/outdoor unit communication cable	Indoor/Outdoor unit power cable
			

Installation accessories

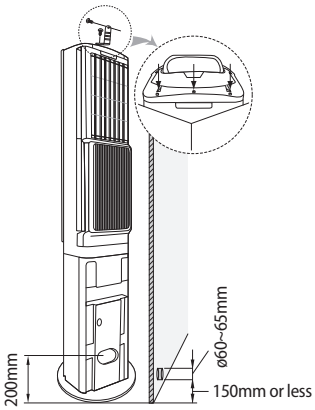
Drain connection hose	Connection pipe & Insulation (Φ6.35mm)	Connection pipe & Insulation (Φ15.88mm)	Sleeve
Service tube	**Cable tie**	**Putty**	**Bushing**
Finishing tape	**Drain plug**	**Drain insulation tube**	

✻ Installation accessories may differ depending on the model.

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 48 2013-04-17 오전 11:07:48

Drilling a hole and fixing the indoor unit

- Drill a hole with diameter of 60~65mm towards the outside.
- If the indoor unit is installed on unstable ground, it may shake by external force or by children and get knocked down. To prevent these accidents, you must fix the top or back of the indoor unit tightly with fixing brackets.



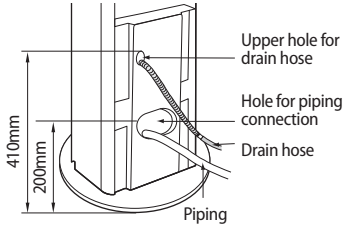
Connecting pipes

WARNING

- When installing, make sure there is no leakage. When recovering the refrigerant, stop the compressor first before removing the connection pipe. If the refrigerant pipe is not properly connected and the compressor works with the service valve open, the pipe inhales the air and it makes the pressure inside of the refrigerant cycle abnormally high. It may cause explosion and injury.

Installation procedure

1. Slightly hit the hole, for piping connection, with your hands or hammer.



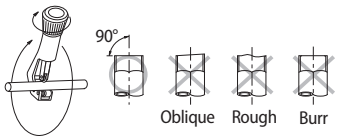
사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 49 2013-04-17 오전 11:07:49

Connecting pipes

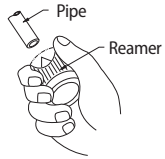
2. Bend the connection pipe to an appropriate length using a bender depending upon the installation place.
3. Perform pipe bending process.
   - Perform bending of the pipe using the pipe bender which has a specified bending radius.
   - Be sure to take full care to perform bending of the pipe successfully at one time. Bending and unbending the pipe more than twice makes the bending work increasingly difficult.
4. Connect the high pressure pipe (ø6.35mm) and low pressure pipe (ø15.88mm) to the high/low pressure pipe of the outdoor unit and tightening by applying appropriate torque.

▶ **Flare process**

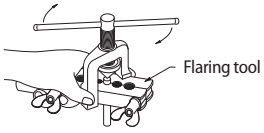
1) Cut the pipe using the pipe cutter.



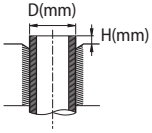
2) Remove burr on the edge of the pipe.
   - If burr is not removed after cutting the pipe, there is a risk of refrigerant gas leakage.
   - If foreign substance such as burr goes into the pipe, there is a risk of product breakdown. Therefore, face the pipe downward when doing the work.



3) Insert the flare nut into the pipe, and then perform the flare process.



▶ **Flare length**



Outer Diameter (D)	ø6.35	ø9.52	ø15.88
Height (H)	1.3mm	1.8mm	2.2mm

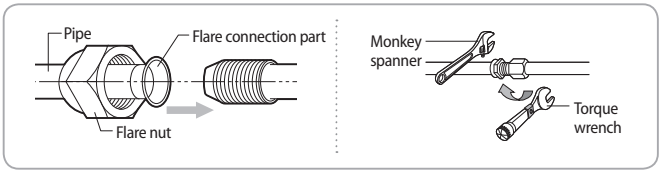
▶ **Incorrectly flared pipes**

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 50 2013-04-17 오전 11:07:49

▶ **Tightening of connection parts**

Alight the pipes to be connected and tighten the flare nuts with your hands first and then with a torque wrench, tighten it in a direction shown in below illustration.

- You can avoid of gas leakage by applying refrigerant oil on the flare connection part.



Diameter(D)	ø6.35mm	ø9.52mm	ø12.70mm	ø15.88mm	ø19.05mm
Torque (kgf•cm)	140~170	250~280	380~420	440~480	990~1210

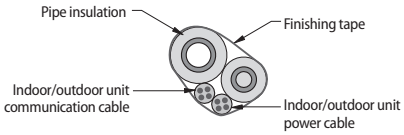
CAUTION

- Apply the torque depending on the diameter and tighten it securely to make sure there is no leakage.

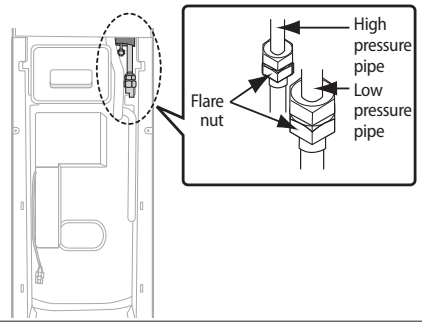
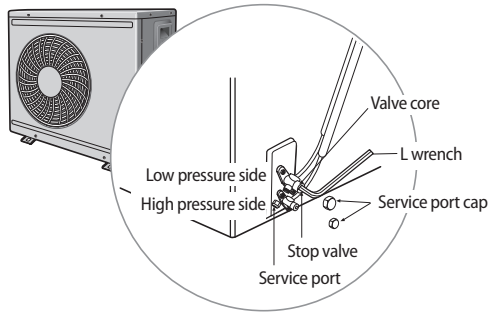
5. Eliminate the uncondensed gas with vacuum pump and open the service valve to put the refrigerant.
   - Make sure to perform leak test. (Refer to 'Performing leak test' on page 58.)
6. Insulate the drain hose after connecting it.
   - Insulate it correctly to avoid dew formation.

▶ **Pipe insulation**

1) Insulate the refrigerant pipes heavily with the finishing tape. If the insulation is poor, dew may form and leak through the indoor.
2) Use finishing tape wind up the refrigerant pipe.
3) When you bend the pipe and secure a minimum bending radius of 100mm to prevent any distortion of the pipe.



7. Wind a finish tape when connecting refrigerant pipe, and communication cable is completed.

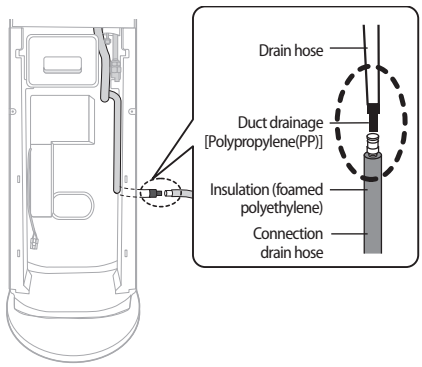
Indoor unit	Outdoor unit
	

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 51 2013-04-17 오전 11:07:50

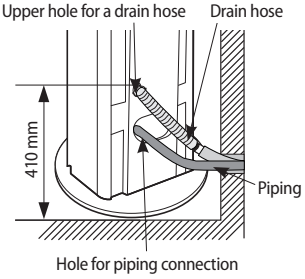
Connecting drain hose

1. Slightly hit the hole, for drain hose, with your hands or hammer.
2. Insulate the drain hose with drain insulation tube and fix it with tape.
3. Make the drain hose to direct downward to establish natural draining.
   - Make sure to check for proper drainage after connection

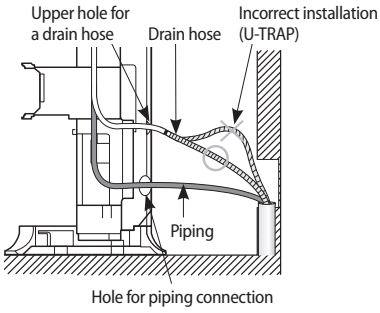
CAUTION
- Fix the drain hose tightly to prevent any water leakage.
- Do not use the extended drain hose.
  - Since water may leak from the connection part, make sure that you do not extend the drain hose. However, if extension is unavoidable due to its short length, use silicone sealant to securely seal the connection to prevent leakage. (Do not use the insulation tape.)



- Connect the drain hose through the upper hole for drain hose.



- Connection with wire-concealed piping



CAUTION
- Make sure the U-TRAP does not occur. Water may overflow and cause property damage.

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 52 2013-04-17 오전 11:07:51

Electrical work

CAUTION
- The electrical work should be performed by a specialist qualified for the work.
- Avoid using multi-concent but use rate power supply for air conditioner. (Use separate power cable for outdoor unit.)

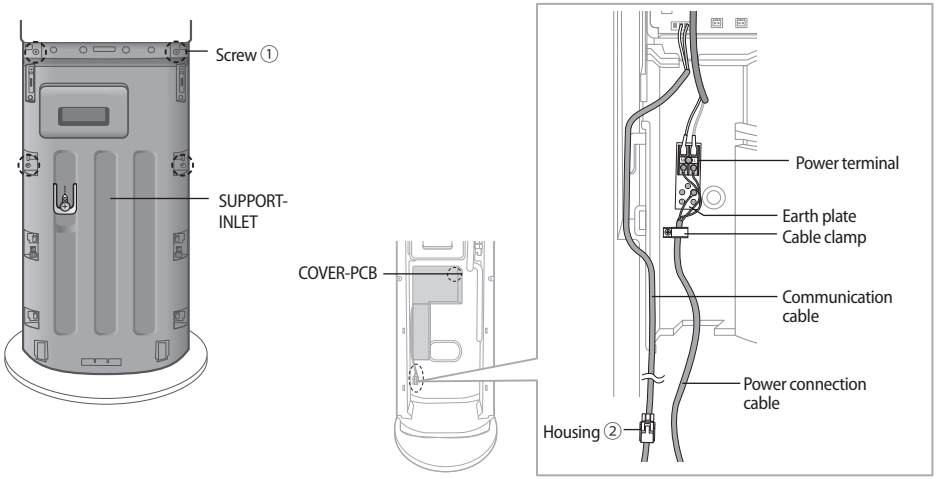
Wiring standard

- ▶ Always make sure that the power supply is compliant with current safety standards. Always install the air conditioner incompliance with current local safety standards.
- ▶ Make sure to install exclusive power supply(purchase separately).
  - If you use multiple connecting, there is a risk of electric shock or fire.
- ▶ If the outdoor power supply has been selected, install circuit breaker (ELCB). (Purchased separately)
- ▶ Make sure to connect earth wire.

Type		
	Indoor unit	Indoor power (Indoor/outdoor unit power cable)
	Outdoor unit	Outdoor power (Earth leakage circuit breaker)
Power		1Ph, 220~240V, 50/60Hz
Circuit breaker		20A
Indoor/outdoor unit power cable		1.0mm² or more
Outdoor unit power cable		2.5mm² or more
Indoor/outdoor unit communication cable		0.75mm² or more

Connecting procedure

1. After loosening the 4 screws(①) of support-inlet, disassemble the support-inlet.
2. Connect the housings of communication cable(②) for an indoor unit and outdoor unit.
3. Fix the power connection cable and communication cable with a cable clamp.
4. After assembling the SUPPORT-INRET and fix it with the screws(①).



사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 53 2013-04-17 오전 11:07:51

Electrical work

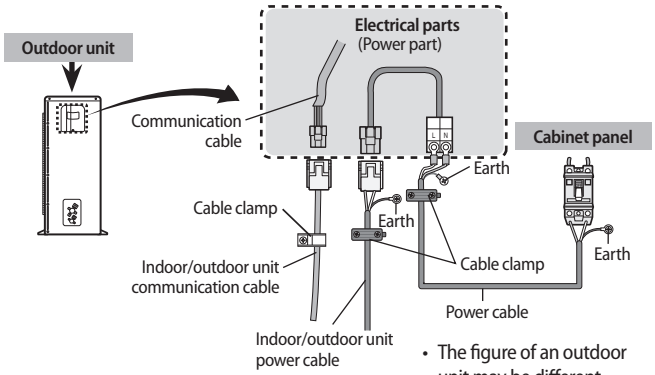
Safety information on outdoor unit power supply

- Power cable must be hard chloroprene synthetic rubber or better, which is certified with safety certification (60245 KS IEC 66).
  - Rated voltage: 450/750V, H07RN-F (60245 KS IEC 66)
  - Use cable over 2.5mm² (Distance : 15m or less)

Type of outdoor unit power supply

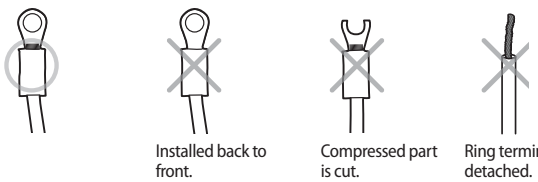
- Comply with tightening torque to make sure that the screws do not get loose.

Screw	Torque	
	kgf•cm	N•m
M4	25~40	2.5~4.0

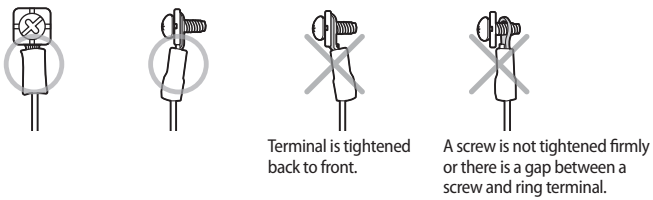


- The figure of an outdoor unit may be different depending on models.

- Before connecting, compressed part of the terminal should face upward.



- After tightening, there should be no gap between a terminal and a screw.
  - If there is a gap, fire may occur due to the heat of electronic connection part.



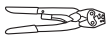
CAUTION

- When connecting the cables to the outdoor unit, reversing the connection of power and communication cable or connecting the earth wire incorrectly, electric leakage or product malfunction may occur.
- Do not cut or modify the supplied cable and install it.
- There is no front and back for the communication cable, so it can be switched.
- Use solderless ring terminal to connect the power cable to the power terminal block. If you connect stranded or solid wires without solderless ring terminal, heat may generate from the connected part and cause fire.

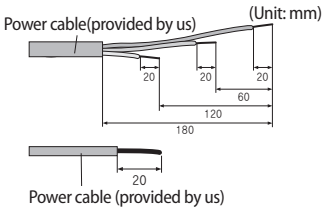
사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 54 2013-04-17 오전 11:07:52

How to connect your extended power cables

▶ **Items to prepare**

Tools	Crimping plier	Connection sleeve (mm)	Insulation tape	Contraction tube (mm)
Spec	MH-14	20xØ6.5(HxOD)	Width 19mm	70xØ8.0(LxOD)
Shape				

1. As shown in the figure, peel off the shields from the rubber/wire of the power cable.
   - Peel off 20mm of the wire shields of the tube installed already.

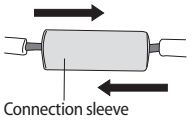


CAUTION
- After peeling off the tube wire, you must insert a contraction tube.

2. Insert both sides of core wire of the power cable into the connection sleeve.

▶ Method 1

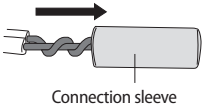
Push the core wire in to the sleeve from both sides.



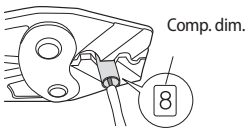
CAUTION
- After peeling off the tube wire, you must insert a contraction tube.

▶ Method 2

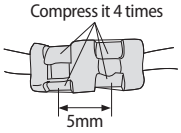
Twist the wire cores together and push it in to the sleeve.



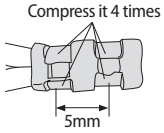
3. Using a compressor, compress the two points and flip it over and compress another two points in the same location.
   - The compression dimension should be 8.0.
   - After compressing it, pull both sides of the wire to make sure it is firmly pressed.



▶ Method 1

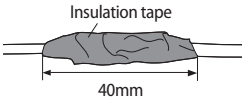


▶ Method 2

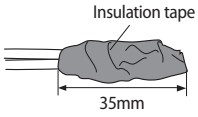


4. Apply heat to the contraction tube to contract it.

▶ Method 1



▶ Method 2

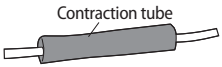


ENGLISH

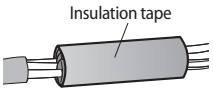
사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 55 2013-04-17 오전 11:07:53

Electrical work

5. After tube contraction work is completed, wrap it with the insulation tape to finish.

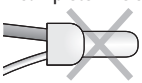


6. After tube contraction work is completed, wrap it with the insulation tape to finish.



CAUTION

- In case of extending the electric wire, please DO NOT use a round-shaped pressing socket.
  - Incomplete wire connections can cause electric shock or a fire.

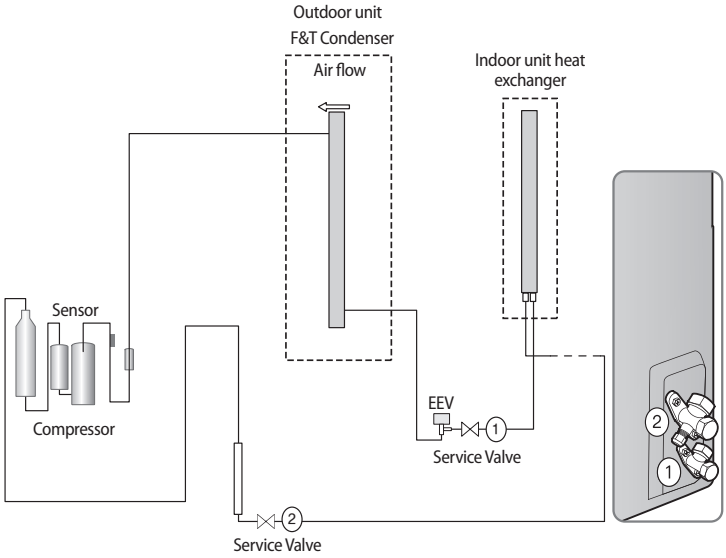


사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 56 2013-04-17 오전 11:07:53

Vacuum pump

Vacuuming pipe

1. Completely connect the indoor/outdoor unit pipes.
2. Connect the manifold gauge to the service valve port of the low pressure side on the outdoor unit.
3. Execute vacuum pump for over 30 minutes.
   - If the pipe extension is larger, time of the vacuum pump should also get longer.
4. After degree of vacuum has been established, open the service valve ①~② as shown in the illustration.
   - Use soapsuds to check for refrigerant leakage on the connection part of the pipes

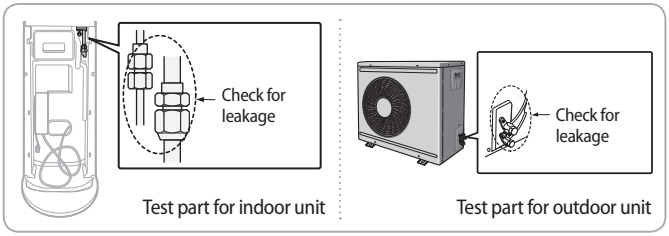


▶ Vacuuming air conditioner
   - Execute vacuum pump on the manifold gauge connected to low pressure side ②, to purge the air from the pipes and indoor unit.

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 57 2013-04-17 오전 11:07:53

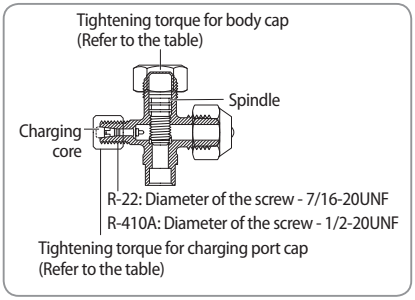
Performing leak test

▶ Use leak tester or soapsuds on the pipe connection part after performing vacuum pump.



▶ Before inspecting the leakage, use a torque wrench to close the cap for the service valve.(Comply with a tightening torque for each size of the diameter, and tighten the cap firmly to prevent any leakage.)

▶ To check for any possible leakage, insert inert gas into the pipes connected to indoor/outdoor units and check the connection part of the indoor/outdoor units with soap lather or liquid for leakage test.


Tightening torque for body cap
(Refer to the table)
Spindle
Charging core
R-22: Diameter of the screw - 7/16-20UNF
R-410A: Diameter of the screw - 1/2-20UNF
Tightening torque for charging port cap
(Refer to the table)

Outer Diameter (mm)	Tightening torque	
	Body cap (N•m)	Charging port cap (N•m)
Ø6.35	20 ~ 25	10 ~ 12
Ø9.52	20 ~ 25	
Ø12.7	25 ~ 30	
Ø15.88	30 ~ 35	
Ø19.05	35 ~ 40	

✻ 1 N•m = 10 kgf•cm

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 58 2013-04-17 오전 11:07:54

Installing the earth wire

Earthing must be done by the installation specialist for your safety.

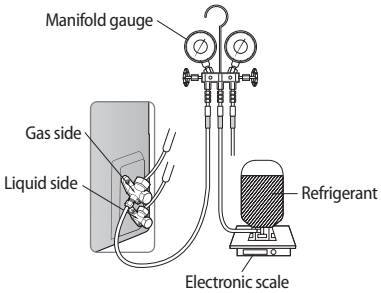
▶ Connect grounding electrode and the air conditioner.

- Perform the earthing work 3 on the outdoor unit earthing terminal.

Charging refrigerant

1. Connect the manifold gauge in the low pressure side (gas) and press **Set/Cancel, Mode, Temp** + button simultaneously for 5 seconds to enter the refrigerant charging mode. When the outdoor unit operates, charge the refrigerant.
2. Charge the refrigerant depending on the pipe length.
   - If the installed pipe length exceeds standard length (5m), you must add 30g of refrigerant (R-410A) for every 1m.
   - You do not need to charge the additional refrigerant when pipe length is less than 5m.

Supplied pipe length
5m



3. After charging the refrigerant, disconnect the manifold gauge from the service port and close the service cap.
4. Deactivate the refrigerant charging mode by pressing **Set/Cancel, Mode, Temp** + button simultaneously for 5 seconds.

CAUTION

• Make sure to charge refrigerant with accurate amount by using the electronic scale.

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 59 2013-04-17 오전 11:07:54

Check and test operation

1. Supply power to the air conditioner.
2. Turn on the air conditioner.
3. While pressing and holding the **Set/Cancel** button on the remote controller, press the **Power** ⏻ button for 3 seconds to display the temperature of indoor heat exchanger.
   - Write down the displayed temperature.
4. Press the **Turbo** button on the remote controller to operate in turbo mode for 10 minutes.
5. Check if the indoor unit is operating normally.
   - Standard condition to judge normal operation. (Indoor/outdoor unit over 21°C, operate in Cool mode for over 10 minute)
6. While pressing and holding the **Set/Cancel** button on the remote controller, press the **Power** ⏻ button for 3 seconds to display the temperature of indoor heat exchanger.
   - If the displayed temperature differs over 10°C from the temperature written down previously, it is operating normally.
7. When checking above step 1~6 is done, tell the user how to use the air conditioner.

Pump down procedure (When removing the product)

1. Press the **Power** ⏻ button on the indoor unit control panel for 5 seconds to enter the Pump down mode and operate the compressor for over 5 minutes. Or, Press the **Set/Cancel, Mode** and **Temp -** button on the remote controller simultaneously to enter the Pump down mode and operate the compressor for over 5 minutes.
2. Remove the **High/Low** pressure side valve cap.
3. Use the L wrench to completely close the valve on the high pressure side.
4. After 2 minutes, completely close the valve on the low pressure side.
5. Press the **Power** ⏻ button on the indoor unit control panel for 5 seconds to deactivate the Pump down mode. Or, Press the **Set/Cancel, Mode** and **Temp** - button on the remote controller simultaneously to deactivate the Pump down mode.
6. Disconnect the pipe.

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 60 2013-04-17 오전 11:07:54

MEMO

사우디,남아공향 FAC MEMORY 냉난방_IBIM_EN_03892A(2).indd 61 2013-04-17 오전 11:07:54